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PROGRESS REPORT NO. 14

L-BAND

TRAVELING-WAVE TUBES

Index No. NE-111613, Subtask 15

Contract N0bsr-57413

July 1953

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CASE 3-13-73

VACUUM TUBE LABORATORY

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August 1953

NAVY DEPARTMENT, BUREAU OF SHIPS
WASHINGTON, 25, D.C.

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PROGRESS REPORT NO. 14

L-BAND TRAVELING-WAVE TUBES

During the month of July, 1953, work continued on rebuilding the third developmental model Type X-244 traveling-wave tube. The component parts of the tube were all chemically cleaned to remove accumulated oxides before being reassembled. New components were used wherever old ones were unfit for further use. Reconstruction was completed by the latter part of the month, and the tube is now ready for processing and testing.

The vacuum envelope of the demountable gun test tube that had been designed for testing grids and cathodes for the electron gun was assembled during the past month. It will be used for testing a new gridded-anode structure and thoriated tungsten cathode as soon as the fabrication of those items is completed.

Tests continued on the bifilar-helix output matching section, with results that showed a match below 1.8 VSWR over the frequency range of the tube. Further effort will be devoted to the improvement of this match.

The power supply for the pulse modulator was received from the subcontractor, and the delay-line section is scheduled for delivery in August. Electrical connections were made to the power supply so that the operation of the modulator can be tested as soon as the delay-line section arrives.

Work on the exhaust station and auxiliary services for processing the tube continued.

During the next month the third developmental model Type X-244 traveling-wave tube will be processed and tested. Work will also continue on the fabrication of new rectilinear electron-gun test parts. Further improvement on the bifilar-helix output match will be attempted. The installation of auxiliary services and

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exhaust equipment will continue.

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